Chapter 5. River Flooding

5.1. Introduction

We have devoted a separate chapter to the specific hazard of river flooding. Jersey County is located at the confluence of the Mississippi and Illinois Rivers, is adjacent to the great Missouri-Illinois rivers floodplain, and embraces three watersheds (Piasa Creek, Otter Creek, Macoupin Creek). River flooding—1973, 1993, 2008, 2013—has consistently been the greatest natural hazard confronting the county in terms of property damage, cost to government to respond, insurance losses, and overall cost to citizens. It is the primary focus—because of its actual and expected occurrence, and the past and future estimated costs—of the county’s hazard mitigation efforts.

The county’s mitigation efforts in response to river flooding are focused through the office of the Jersey County Flood Plain manager and his staff, who report directly to the County Board. The success of the county’s efforts has been recognized at the state and federal levels.

Mitigation of river flooding occurs on two levels—the “macro” or floodplain level, managed by government agencies, and the “micro” or individual property level, managed by the property owner. The latter is in response to federal, state and local requirements and incentives.

Macro or floodplain level efforts include management of the floodplain, implementation of a wide array of natural resource protection efforts (detailed in Chapter Six as these efforts mitigate a number of natural hazards), and specific efforts such as construction, inspection, and maintenance of levees.

Micro or individual property protection measures are used to protect man-made structures or property subject to damage.

Individual property protection measures are normally implemented by the property owner, although technical and financial assistance can be provided by a government agency.

5.2. Macro Strategy: Floodplain management

Jersey County entered the 21st Century without any attempt at floodplain management or mitigation. The history of Jersey County's non-performance likely stemmed from ignorance of the importance of the NFIP and a sudden realization of the potential, severe negative consequences of NFIP suspension. The ramifications of suspension from NFIP have broad consequences beyond merely clubhouse flood insurance eligibility. Government funded or guaranteed loans; disaster assistance for other than flood disasters; and other future funding/assistance for non-compliant Jersey County areas, could be negatively impacted to many non-flood prone county residents.

Jersey County typically retained a part time building and floodplain inspector. This sole inspector was generally a retiree who was not trained prior to accepting this position and did not receive any training after employment. There was little or no County Board oversight or direction given to this inspector and the inspector's position was considered as mostly a formality of NFIP participation.
In March 2001, Jersey County received notification of its impending probation in the NFIP. For whatever reason, this was the first notification or first awareness of this problem by many of the County Board members and County Officials. Upon the receipt of this letter of impending probation, meetings were held and emergency actions were taken. This included the appointment of a full time Building Administrator/Floodplain Coordinator. A new Building Administrator/Floodplain Coordinator was appointed to his position in June 2002.

The Building Administrator/Floodplain Coordinator for Jersey County is now a full time compensated position, supported by an administrative assistant. This office reports directly to the County Board.

Following the appointment of the Building Administrator/Floodplain Coordinator, meetings were held with representatives of FEMA, IDNR and Jersey County Board Members and County Officials. Deficiencies were recorded and were purchased. The process of recording violations and taking measures bring these properties in compliance, and to institute policies and procedures to insure future compliance with all federal, state, and local ordinances and regulations.

It is also noteworthy that the posting of notices in all Jersey County flood prone areas, where existing flood prone clubhouses and buildings exist, has assisted owner response for damage assessment. Numerous block newspaper ads in the local paper circulation and articles in the St. Louis area paper have also raised most recent public awareness. It is unfortunate that many clubhouse owners are not Jersey County residents and many reside within 50 mile radius, but outside of Jersey County.

A sum total of 42 known NFIP violations were relayed to Jersey County. Some of these violations were and are of long-standing status. As of February 2007, all but one of these violations has been resolved. Violations become more complex because of the County's past ineffectual general administrative lapses or inaction. However, all the solutions were attained on all violations either through litigation or a cooperative arbitration agreement. Also, by unanimous consent, the Jersey County Board, on December 19, 2002, passed a resolution of intent to fully comply with the NFIP and same board, by this action, is totally committed to long term and continuing NFIP compliance.

Jersey County's NFIP compliance and resolutions include an effort by the Building Administrator/Floodplain Coordinator, in conjunction with the County Assessor's office, to identify and measure all floodplain properties. This includes both fee simple and leasehold sites. Sales have been and will continue to be cataloged to supplement other cost estimate documentation (inclusive of Residential Substantial Damage Estimator of RSDE 2.0) for damage assessments. A filing of date noted digital photos, damage assessments, notifications and responses of all floodplain improved sites will be archived for each parcel.

Cooperation has been sought and achieved with the Illinois Department of Natural Resources and the U.S.
Army Corps of Engineers over the past 4 years. Access has been attained, with the Corp's help, to clubhouses only accessible by boat.

In summation, Jersey County has most recently committed manpower and funding resources not only to resolve existing NFIP violations but to insure continued compliance with the NFIP.

1. This has included a letter of intent for NFIP compliance by resolution of the Jersey County Board.

2. The County Building Administrator/Floodplain Coordinator will conduct a minimum of monthly site inspections in all floodplain areas.

3. County ordinances and amendments will be adopted as needed for enforcement enhancements.

4. A Countywide effort of building permit compliance will also be enforced in conjunction with the County Assessor's office, building suppliers, contractors, utility companies, and other sources.

5. Media relations (as needed but no less than quarterly), public notices, location postings will be maintained for public awareness.

6. Jersey County will be joining a Community Rating System as soon as the Mitigation Plan is adopted.

Although these corrective measures should have been implemented years ago, the current commitment of Jersey County to attain and maintain compliance with the NFIP is strong, for the betterment of Jersey County and all of its residents. It is also the continued strength of the overall NFIP which can add to the betterment of the environment in which we live.

5.2.1. Summary of Corrective Measures by Jersey County, Illinois, for NFIP:

Jersey County has drafted procedures to ensure that permits are obtained for all development within the special flood hazard area and establish a formal record keeping system to maintain a historical record of those permits issued. Documented files are maintained individually on each parcel with Elevation Certificates, State Permits, County Permit, photos, special subdivision guidelines (if applicable). Time frame for completion is requested from applicant and currently is recommending to the County Board a time frame for completion should be issued on all County Permits.
At least every month, floodplain areas are inspected for changes. U.S. Corps of Engineers and the County's Sheriff's office is solicited for data and cooperation in discovery and enforcement. Violators are given notices of any deficiency or breech of ordinance. A stop work order can and will be enforced through the County State’s Attorney's office and delivery of same by the Building Administrator/Floodplain Coordinator or the County Sheriff's office.

News media will be used, if possible, posted signs, and red tag notices are an effort to inform and alert violators. Informative packets have been established for step by step procedural instructions subsequent to any flood.

5.2.2 Permitting Procedures:

1. Applicant requests to apply for Jersey County Building Permit.
2. Applicant conveys general location of site for proposed building or building alteration.
3. Jersey County Building Administrator/Floodplain Coordinator requests specific location of building or building alteration site.
4. Applicant supplies deed or leasehold legal description, County tax parcel number, survey (if available). (County Assessor's office may supply some detail for applicant).
5. County Building Administrator/Floodplain Coordinator determines if site, or any portion of site, is within an identifiable floodplain.
6. County Building Administrator/Floodplain Coordinator requests of applicant precise plottage location of building or building alteration within the site. An engineer's design is required.
7. If County Building Administrator/Floodplain Coordinator cannot determine if all of site or none of site is within a floodplain and portions of site may be within a floodplain, then a personal visit to the site by the inspector is necessary. If floodplain is uncertain, upon visit, in relation to proposal then a survey and/or base flood elevation (BFE) certificate is required.
8. If all of site is in the floodplain, then BFE is required for all proposed buildings or building alterations and BFE to be completed and maintained on file.
9. Applicant to complete requested information on building permit(s) application(s). A review with the applicant of Technical Bulletin 2-93 on Flood Resistant Materials Requirements should be conducted and applicant signs receipt of TC 2-93 or signature of applicant that complete review of requirements has been attained.
10. Detailed list by applicant of fill material, final grade elevation proposed, pier column supports and material, BFE of lowest floor, utility service entries and interior utility distribution and outlets above the BFE. All data to be submitted for plans and in accordance with TC 2-93 and Jersey County Ordinances.
11. Jersey County Ordinances are provided to applicant for compliance. Any special requirements, flowage restrictions, hazardous materials, etc., are noted. Jersey County Flood Plain Ordinance of 1989, amended 2-11-92. The ordinance was adopted on June 10, 2003.
13. Finish Jersey County Permit Application.
14. Review with applicant, building elevations, ground fill requirements. Specify no change or
alterations in plans outlined in this permit can be effected without County approval.

15. Conduct site inspection for potential problems. All originals maintained in Jersey County office file.


5.2.3 Inspection Procedures for Certificates:

1. Established building permit in process file reminder, particularly for floodplain permits.
2. Retain contact with permits in process and visually inspect sites in progress for compliance to permit application.
3. A Final inspection is documented with pictures, notes, date of completion.

5.2.4. Inspection Procedures for damage assessments, post flood:

1. Use of a hazard mitigation grant to establish lowest floor elevations by GPS data surveys. (All of Coon Creek, Powerline Subdivision, Healy Park, Nutwood, Kjar Subdivision, Eagleton Park, Mill Creek, Piasa Haven and Grafton have been surveyed).
2. Use of NFIP RSDE 2.0 guideline to valuation of damage assessment.
3. Review of known sales data in area to fit national cost of manual subscriptions to actual area market conditions for more accurate cost estimates.

Source: Jersey County GIS
There are over 1138 structures in the Jersey County Floodplain and 142 flood insurance policies totaling over $6,000,000. Jersey County poses a particularly interesting challenge, in that it contains over 35 miles of river frontage and over 20,000 acres of floodplain, yet a population of less than 25,000 people. It is a lot to manage with few resources.

5.2.5. Enforcement Procedures:

1. Cooperation with the Jersey County State’s Attorney in reducing the number of violations has been successful to this point. (See copies of corrective action completed and in process).
2. County Sheriff's Department cooperation to enforce stop work permits.
3. Regular, complete visual inspections by the Jersey County Building Administrator/Floodplain Coordinator of floodplain areas for new violations and progress of violation resolutions efforts.
4. Stop work orders will be given for all departures from approved permit applications and to non-permitted parcel violations with a 10 day compliance or fine imposition.
5. Cooperation has been attained and will be coordinated with the U.S. Corps of Engineers on yanking leases if in unabated violation.
6. Each parcel file and particularly a parcel in violation will have a file separately maintained with documentation of all correspondence, phone conversations.

5.3 Macro Strategy: Flood Control

Probably the best known flood control measure is a barrier of earth (levee) erected between the watercourse and the property to be protected. Levees and floodwalls confine water to the stream channel by raising its banks. They must be well designed to account for large floods, underground seepage, pumping of internal drainage, erosion and scour. Jersey County has approximately 20 miles of levee known as Nutwood Levee District controlled by a Private Board and mainly protects farmland with very few residents located within its boundaries.

The Nutwood Drainage and Levee District (D&LD) protects 10,360 acres of primarily agricultural land located in Greene and Jersey Counties, Illinois, on the left bank of the Illinois River between river miles 15.2 and 23.7 above the mouth of the Illinois River. This federally constructed levee provides protection for a 4 percent chance of exceedance (25-year event). The levee was overtopped and breached completely during the flood of 1993, inundating the area and causing a disruption of traffic on Illinois Routes 100 and 16 for over three months. The recommended plan of improvement for this project includes a levee raise of 11.4 miles of existing levees, improved pumping capabilities, and construction of seepage control measures. The levee is monitored by the U.S. Army Corps of Engineers, St. Louis District and was authorized by Section 203 of Flood Control Act of 23 October 1962 (Public Law (PL) 87-874).

While levees may reduce flood damage for smaller more frequent rain events, they may also overtop or breach in extreme flood events and subsequently create more flood damage than would have occurred without the levee. This was vividly illustrated during the Great Flood of 1993. Jersey County does have its own pumping station and regulates the water through drainage canals. The levee was breached in the 1993 flood and repaired. As of today there has been no increase in the height of the levee. There is talk of the Corps of Engineers raising the Nutwood levee between 1’ and 5’ in the next 10 years.

Relative to Jersey County, there are four types of flood control projects:

- Levees
- Dams
- Sedimentation
- Drainage system maintenance
Flood control projects have not usually the task of county level government because they require assets of much greater magnitude. The primary agency responsible for flood control, both historically and today, in the region is the United States Army Corps of Engineers. The Corps maintains an extensive series of dams and locks along both the Mississippi and Illinois Rivers. The Melvin Price Dam and Locks (#26) is located at Alton, Illinois, just down river from Jersey County. The dam creates what is sometimes called “Alton lake,” the section of the Mississippi River constituting the southern border of the county. The level of the “lake” impacts the village of Elsah and the town of Grafton. Grafton sits at the confluence of the Mississippi and Illinois Rivers, so it is also directly impacted by the state of the Illinois River. The Army Corps of Engineers has some ability to regulate the level of water along the rivers, by opening or closing the dam at Alton, thereby releasing water, and by opening or closing dams above Grafton on either river. In addition to the two towns, the level of the Mississippi River in particular affects tributaries such as the Piasa Creek basin.

The Army Corps of Engineers is also responsible for levees along the rivers. Levees are designed and located for various purpose, depending on what they are expected to protect—agricultural lands, developed lands, industrial zones—and the magnitude of the expected flooding. Thus, the size and structure of levees are described based on magnitude of flooding—100 year flood or 500 year flood, for example. There are no federally created or maintained levees in Jersey County.

Over the past decades there have been proposals to build industrial levees around St. Charles County, Missouri, which is directly opposite from Jersey County. Jersey County residents, organizations and agencies have strongly opposed the construction of industrial levees for a number of reasons, though the primary reason can be described with the phrase, “you can’t pour five gallons of water in a three-gallon bucket.” Floodplains are nature’s overflow tank. Levees close off floodplains, forcing water into more confined areas. Without reducing the amount of water, the water will rise farther faster and seek new areas to cover. These areas are most likely developed areas along the north bank of the Mississippi, including the cities, towns and villages of Jersey and neighboring counties. The water will also back up the tributaries into developed areas which were originally not flooded. The creation of levees effectively redefines and expands the floodplain throughout Jersey County.

Jersey County has one levee system. It is the agricultural levee of the Nutwood Levee District, which protects 10,360 acres of agricultural land at the 25 year level along the eastern bank of the Illinois River above Grafton. Like many agricultural levees, the Nutwood levee is maintained by an independent, quasi-governmental tax support agency, the Levee District. During the 1993 flood, the Nutwood levee was breeched and 40,000 acres of agricultural land was quickly inundated. Individual residences, farms, and a number of unincorporated communities were impacted. State highways in Jersey County were as was the primary state highway into neighboring Calhoun County. The breeching of the Nutwood levee demonstrated the economic importance of levees. The immediate impact was the loss of crops; the longer term impact was to the infrastructure of the lower Illinois River, including highways, bridges, ferry service, and electrical transmission. Because of the danger of high voltage skipping from trans-river power lines to the water, electrical power is terminated when water levels reach within certain distance of the power lines. This particularly impacts electrical power being transmitted into Illinois from Missouri, putting increased straining on southwestern Illinois power generation.

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There are no federal dams in Jersey County, though the Army Corps of Engineer dams below Jersey County (Lock and Dam 26 at Alton) and those above the county on both the Mississippi and Illinois rivers can directly impact river levels in Jersey County. There are a number of private earthen dams in Jersey County. These dams are privately constructed and maintained for the purposes of individual land owners. The dams serve one or more of three purposes: retention of water for agricultural purposes (irrigation and water for stock), retention of water for recreation (such as boating and stocked lakes for fishing), and to slow run-off to reduce erosion and soil loss and reduce flash flooding. None of the dams are sufficient to affect river flooding, although carefully placed and managed dams, creating retention ponds, can help mitigate flooding. The primary purpose of these dams, thus, is to protect valuable agricultural, recreational and natural land from deterioration, rather than to protect development.

The appropriate location, construction and maintenance of dams for land protection has been supported by both governmental and non-governmental bodies in Jersey County. The Great Rivers Land Trust, through its Piasa Creek Watershed Project, funded by the Illinois American Water Company, helps farmers and other landowners adopt and practice wise land conservation practices over thousands of acres in southeastern Jersey County and portions of Madison and Macoupin counties. The Jersey County Soil and Water Conservation District recently initiated a similar project for the Otter Creek Watershed, which covers central and southwestern Jersey County. The largest watershed affecting Jersey County is Macoupin Creek, which forms part of the northern border with Greene County. The majority of the Macoupin Creek watershed is in Greene and Macoupin Counties. Management of this watershed needs to be either a multi-jurisdictional or regional effort.

The implementation of modern farming techniques, wise land conservation, and effective watershed management can substantially reduced sedimentation, by reducing erosion with loss of top soil. Reduced sedimentation means that water channels are not impeded and water can flow naturally. Sedimentation can negatively affect the large locks and dams, reducing their effectiveness for flood control, and can block natural channels for water. For over ten years, the Piasa Creek Watershed Project, managed by the Great Rivers Land Trust, has consistently beat measurable targets for sedimentation reduction. The Watershed is also the center of extensive efforts at wetlands reclamation, which mitigates the impact of both river and flash flooding. The success of the Piasa Creek project, directed by an independent non-profit organization, inspired the public-private cooperation, directed by the Soil and Water Conservation District, initiated in the Otter Creek project.

Drainage system maintenance is, ultimately, the responsibility of the property owner. Farmers and major land owners (such as commercial retailers with massive paved parking lots) need to maintain appropriate
drainage, such as retention ponds. Township, county and state highway departments must routinely inspect, clear and maintain drainage relative to roads and bridges. Municipal public works departments must inspect and maintain municipal drainage projects. The Illinois and Mississippi Rivers are the responsibility of the Army Corps of Engineers. For example, the Corps is constructing a series of underwater berms to redirect currents to scour sedimentation from the mouth of Piasa Creek. However, creeks and streams within Jersey County, if they have no impact on development, are left natural.

5.4. Micro Strategies for Flood Mitigation

Generally, natural hazards do not damage vacant areas. The major impact of hazards is to people and improved property. In some cases, properties can be modified so the hazard does not reach the damage-prone improvements. A fire break is an example of this approach - brush and other fuel are cleared away from the building so a fire may not reach it. For the various hazards considered in this plan, flooding is the one hazard that can be kept away from a building. There are four common methods to do this:

- Modify the site to keep the hazard from reaching the structure, either erecting a barrier (levee) between the improvement and the source of flooding or elevating the structure;
- Modify the structure so it can withstand the impacts of the hazard;
- Removal of the structure, either moving or demolishing the structure; and
- Insure the property to provide financial relief after the damage occurs.

5.4.1. Building elevation:

Raising a building above the flood level can be almost as effective as moving it out of the floodplain. Water flows under the building, causing little or no damage to the structure or its contents. Raising a building above the flood level is cheaper than moving it and can be less disruptive to a neighborhood.

Elevation has proven to be an acceptable and reasonable means of complying with floodplain regulations that require new, substantially improved, and substantially damaged buildings to be elevated above the base flood elevation. Elevating a building will change its appearance. If the required amount of elevation is low, the result is similar to putting a building on a 2- or 3-foot-high crawlspace. A problem with this approach is with basements. Only the first floor and higher are elevated. The basement remains as the foundation. All utilities are elevated and the basement is filled in to protect the walls from water pressure. The owner loses the use of the basement, which may deter him or her from trying this approach.

5.4.2. Relocation

Moving a building to higher ground is the surest and safest way to protect it from flooding. While almost any building can be moved, the cost goes up for heavier structures, such as those with exterior brick and stone walls, and for large or irregularly shaped buildings. However, experienced building movers can handle any job.

In areas subject to flash flooding, deep waters, or other high hazard, relocation is often the only safe approach. Relocation is also preferred for large lots that include buildable areas outside the floodplain or where the owner has a new flood-free lot (or portion of the existing lot) available.
5.4.3. Barriers:

A flood protection barrier can be built of dirt or soil (“berm”) or concrete or steel (“floodwall”). Careful design is needed so as not to create flooding or drainage problems on neighboring properties. Depending on how porous the ground is, if floodwaters will stay up for more than an hour or two, the design needs to account for leaks, seepage of water underneath, and rainwater that falls inside the perimeter. This is usually done with a sump and/or drain to collect the internal groundwater and surface water and a pump and pipe to pump the internal drainage over the barrier.

Barriers can only be built so high. They can be overtopped by a flood higher than expected. Barriers made of earth are susceptible to erosion from rain and floodwaters if not properly sloped, covered with grass, and maintained. A berm can settle over time, lowering its protection level. A floodwall can crack, weaken, and lose its watertight seal. Therefore, barriers need careful design and maintenance (and insurance on the building, in case of failure).

A third problem with elevation is that it may expose the structure to greater impacts from other hazards. If not braced and anchored properly, an elevated building may have less resistance to the shaking of an earthquake and the pressures of high winds. Given the low threat of earthquakes and low flood depths in Jersey County, careful design and construction should prevent these secondary problems.

5.4.4. Demolition:

Some buildings, especially heavily damaged or repetitively flooded ones, are not worth the expense to protect them from future damage. It is cheaper to demolish them and either replace them with new, flood protected structures, or relocate the occupants to a safer site. Generally, demolition projects are undertaken...
by a government agency, so the cost is not borne by the property owner, and the land is converted to public use, such as a park.

Acquisition, followed by demolition, is most appropriate for buildings that are difficult to move—such as larger, slab foundation, or masonry structures—dilapidated structures that are not worth protecting.

One problem that sometimes results from an acquisition and demolition project is a “checkerboard” pattern in which nonadjacent properties are acquired. This can occur when some owners, especially those who have and prefer a waterfront location, prove reluctant to leave. Creating such an acquisition pattern in a community simply adds to the maintenance costs that taxpayers must support.

5.5. Repetitive Loss Properties

Repetitive losses are flood-related damages sustained by a structure on two separate occasions during a ten-year period. The cost of repairs at the time of each such flood event, on average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

There are roughly 322 repetitive loss properties in Jersey County. Most of these properties have received two claims. Areas such as Coon Creek, Otter Creek, Coe Land, and Peters Park in Fieldeon; Route 1, Spanky, RR 2, Mill Creek, and Piasa Harbor/Haven in Godfrey; Coon Creek and Powerline in Rosedale; and Coon Creek, Powerline, and Otter Creek in Nutwood have all been hit well over two times by flooding. The chart below pinpoints the areas most susceptible to repetitive losses and how often they have been hit by significant flood events.

Chapter 2 explains the criteria for designation of the County’s repetitive loss areas. These properties deserve special attention because they are more prone to damage by natural hazards than any other properties in the County. Further, protecting repetitive loss buildings is a priority with FEMA and IEMA mitigation funding programs.

The 18 repetitive loss areas were reviewed for the key factors that determine appropriate property protection measures. The criteria used are based on several studies that have identified appropriate measures based on flood and building conditions. While a cost/benefit study was not conducted on each property, these guidelines show which measures are cost-effective.

- “High hazard areas” are areas in the floodway or where the 100-year flood is two or more feet over the first floor.
- Buildings in high hazard areas or in less than good condition should be acquired and demolished.
- Buildings with basements and split level foundations in high hazard areas should be acquired and demolished. They are too difficult to elevate and the hydrostatic pressures on the walls from deeper flooding make them too risky to protect in place.
• Buildings subject to shallow flooding from local drainage should be protected through area-wide flood control or sewer improvement projects.
• Buildings in good condition on crawlspace should be elevated or relocated.
• Buildings in good condition on slab, basement or split level foundations subject to shallow flooding (less than 2 feet) can be protected by barriers and dry flood proofing.
• Recent flood claims. Some properties have not had a flood insurance claim for 20 years, indicating that some measure has probably been put in place to protect the property from repetitive flooding.

These criteria are general and recommendations for individual structures should be made only after a site inspection. Other extenuating circumstances may also alter the recommendations. For example, the building in area 13 is an historic stone structure on the river. Its lower area could be wet flood proofed, providing partial flood protection without adversely affecting its historical appearance.

The results of this review are shown in the table below. Based on the review criteria, acquisition and elevation should be pursued in areas 7, 8, 9, 12 and 14. This does not mean that the entire areas should be bought out. Initial efforts should focus on the most flood prone properties and, in all cases, willing owners.

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5.6. **Progress and Local Implementation:**

Jersey County adopted a Floodplain Ordinance in June of 2003 amending the ordinance in March 2007 and June 2008. Procedures for inspections of construction and amending the freeboard were added. Structures located in the Floodplain have been retrofitted to remove the violations incurred by FEMA. Eight structures have been elevated. Pre disaster and post disaster mitigation grants were put into place to alleviate drainage problems and elevate structures. Utilities are required to be elevated above the flood level on structures and grain bins. Structures that were heavily damaged were demolished and repetitive losses of 257 were submitted for removal. Only 24 repetitive loss structures remain. In addition structures that have substantial damage or improvements of 50% must now be elevated two (2) foot above the base floor elevation.

The City of Grafton has been participating in the National Flood Insurance Program (NFIP) since 1974. Following the Flood of 1993, the city participated in the FEMA federal buyout program thus practically eliminating any cause for floodplain violations. Three structures were elevated, post 1993 flood disaster.

In November 2002 the City of Grafton adopted a new model floodplain ordinance regulating development in floodplain areas. The purpose of the new and updated ordinance serves many purposes which include:

- prevent unwise developments from increasing flood or drainage hazards to others;
- protect new buildings and major improvements to buildings from flood damage;
- promote and protect the public health, safety, and general welfare of the citizens from the hazards of flooding;
- lessen the burden on the taxpayer for flood control, repairs to public facilities and utilities, and flood rescue and relief operations;
- maintain property values and a stable tax base by minimizing the potential for creating blight areas; and
- make federally subsidized flood insurance available;
- preserve the natural characteristics and functions of watercourses and floodplains in order to moderate flood and storm water impacts, improve water quality, and reduce soil erosion, protect aquatic and riparian habitat, provide recreational opportunities, provide aesthetic benefits and enhance community and economic development.
With the above floodplain ordinance in place, the City of Grafton also adopted the 2003 edition of the International Building Codes in October of 2003. This will help to assure all new construction will abide by the floodplain regulations by requiring particular construction standards.

In the City of Grafton there are locations where bridge or culvert replacement or enlarging would reduce flood heights. However, as with structural projects, such work could increase flood problems downstream. The City just awarded a contract to have a new enlarged concrete culvert installed in Mason Hollow Creek in an effort to provide emergency flood road access and allow for improved drainage.

The City of Grafton ordinarily has plenty of warning prior to a flood. However, two major flash flooding incidences occurred in the past five years.

Presently, the City of Grafton’s municipal meeting hall and administrative offices are located in the floodplain as well as the city maintenance building. The logical and practical practice would be to relocate these structures out of the floodplain. However, it would be a very expensive undertaking that the City cannot afford. The City of Grafton has no levee or floodwall nor is it realistic to construct any within the city.

In Jersey County we have elevated roads in Spanky and on Bartlett Road to facilitate a better way of evacuation. Also expanding on re-grading and reopening of ditches on Coon Creek Road allows the water to drain back into the river to stop ponding. In the City of Jerseyville some fill and storm water drainage improvements were needed. The City of Grafton has done buy outs since 1993 to lessen the impact of flood damage by removing the structures.

5.7.   CRS Credit

The CRS credits barriers and elevating existing buildings (Activity 530 - Flood Protection). Elevating a building above the flood level will also reduce the flood insurance premiums on that individual building. Because barriers are less secure than elevation, not as many points are provided.

5.8.   Recommendations:

1. The floodplain of Jersey County must be monitored closely with inspections.

2. Close contact with U.S. Army Corp of Engineers and FEMA should be maintained.
3. Jersey County should continue and enhance its effective floodplain management program.

4. Jersey County authorities complete or update a full inventory of critical facilities, which should include schools and other large gathering places (in addition to hospitals and public safety facilities). The inventory should indicate the status of each facility and the retrofitting needs. Upon completion of an updated inventory, Jersey County authorities prepare a plan for retrofitting needs.

5. Jersey County authorities are to identify and enforce structure requirements in all future critical facilities constructions.

6. The City of Grafton must continue to protect its own publicly-owned facilities with appropriate mitigation measures.

7. Although only a few structures remain in the area most relevant to flooding, the city must attempt to seek funding support for higher cost measures, such as elevation, relocation and acquisition of high priority properties.

8. Jersey County support and expand vigorous enforcement of floodplain ordinances.

9. Appropriate Jersey County agencies engage in levee inspections and improvements.

10. State of Illinois monitors and enforces construction and maintenance of dams in Jersey County.

11. Jersey County enhances its storm water drainage maintenance program.

12. Throughout the City of Grafton there are numerous hollows that have creeks feeding into the river. The creek beds have filled with silt and need to be cleared out. Following the cleaning of the creeks, the City should have an annual inspection and maintenance program consistent with state laws and environmental concerns so as not to disturb habitat.